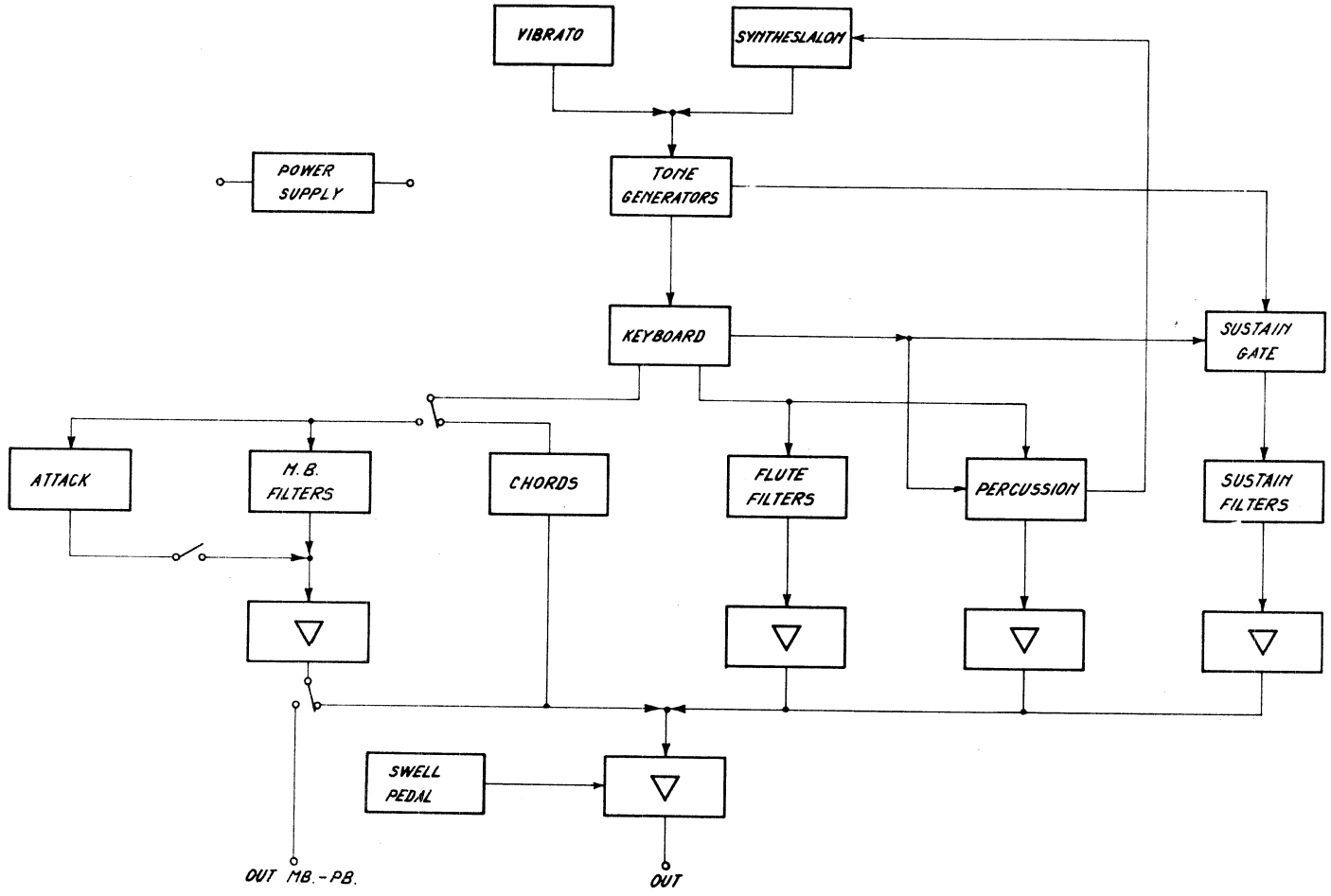
FARFISA

ELECTRONIC ORGAN

VIP 345

schematic
diagrams

BLOCK DIAGRAM



NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

MOD. VIP 345			SERIAL No	
CODE SE-150	DRAWN BY	CHECKED BY	REVISION	
			DATE	15-2-72

ELAT S.p.A. 1173

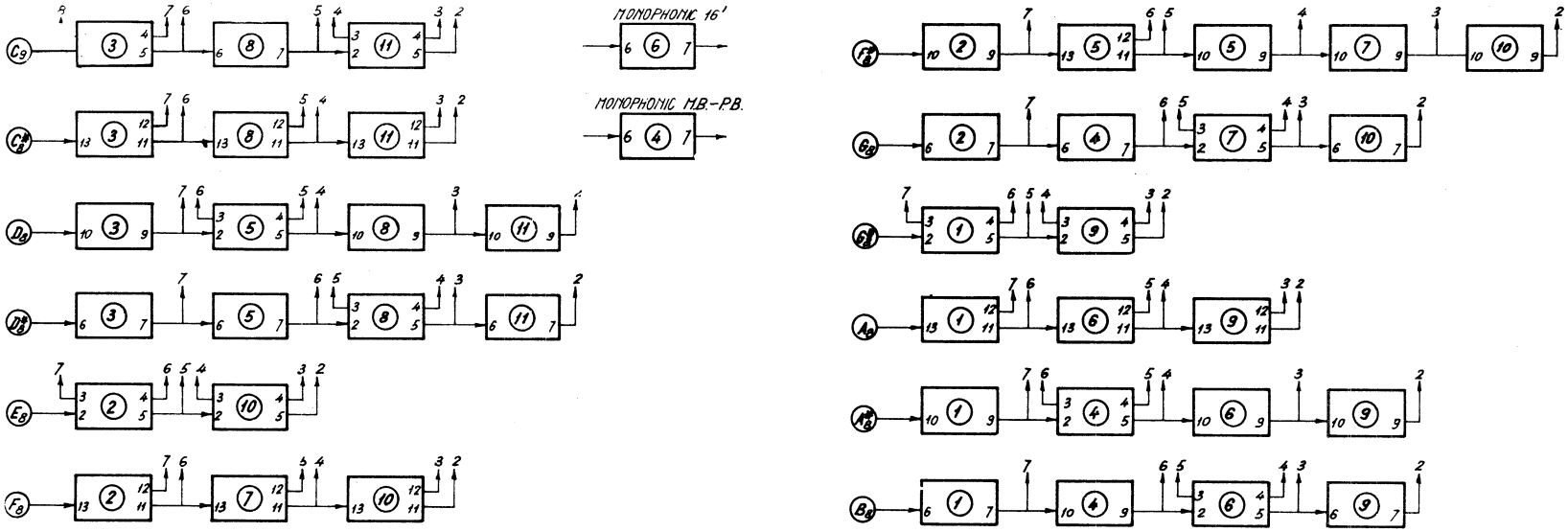
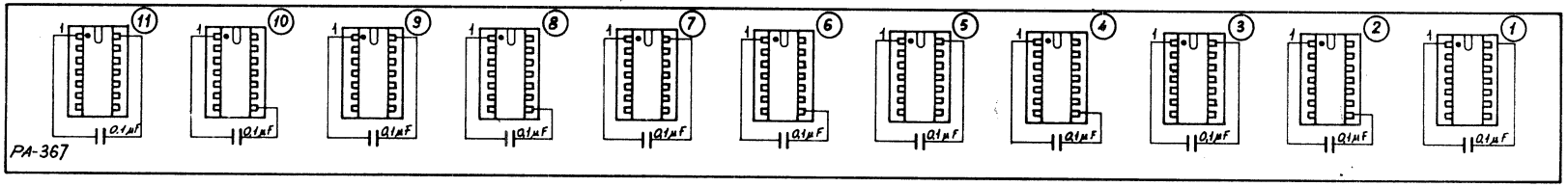


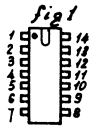
fig. 2

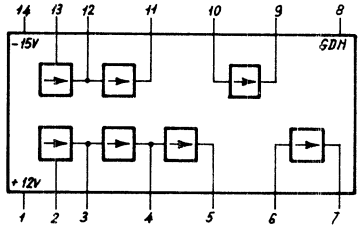


NOTES:

1) THE TONE GENERATOR OF THE KEYBOARD NOTES ARE INDICATED WITH TWO NUMBERS. THE CIRCLED NUMBER THAT APPEARS ALSO ON THE PRINTED CIRCUIT BOARD PA-367 INDICATES THE INTEGRATED CIRCUIT; THE SECOND NUMBER INDICATES THE INTEGRATED CIRCUIT PIN.
2) ASSEMBLY OF THE I.C.s. SHOULD BE MADE AS SHOWN IN FIGURES 1 AND 2.

fig 1



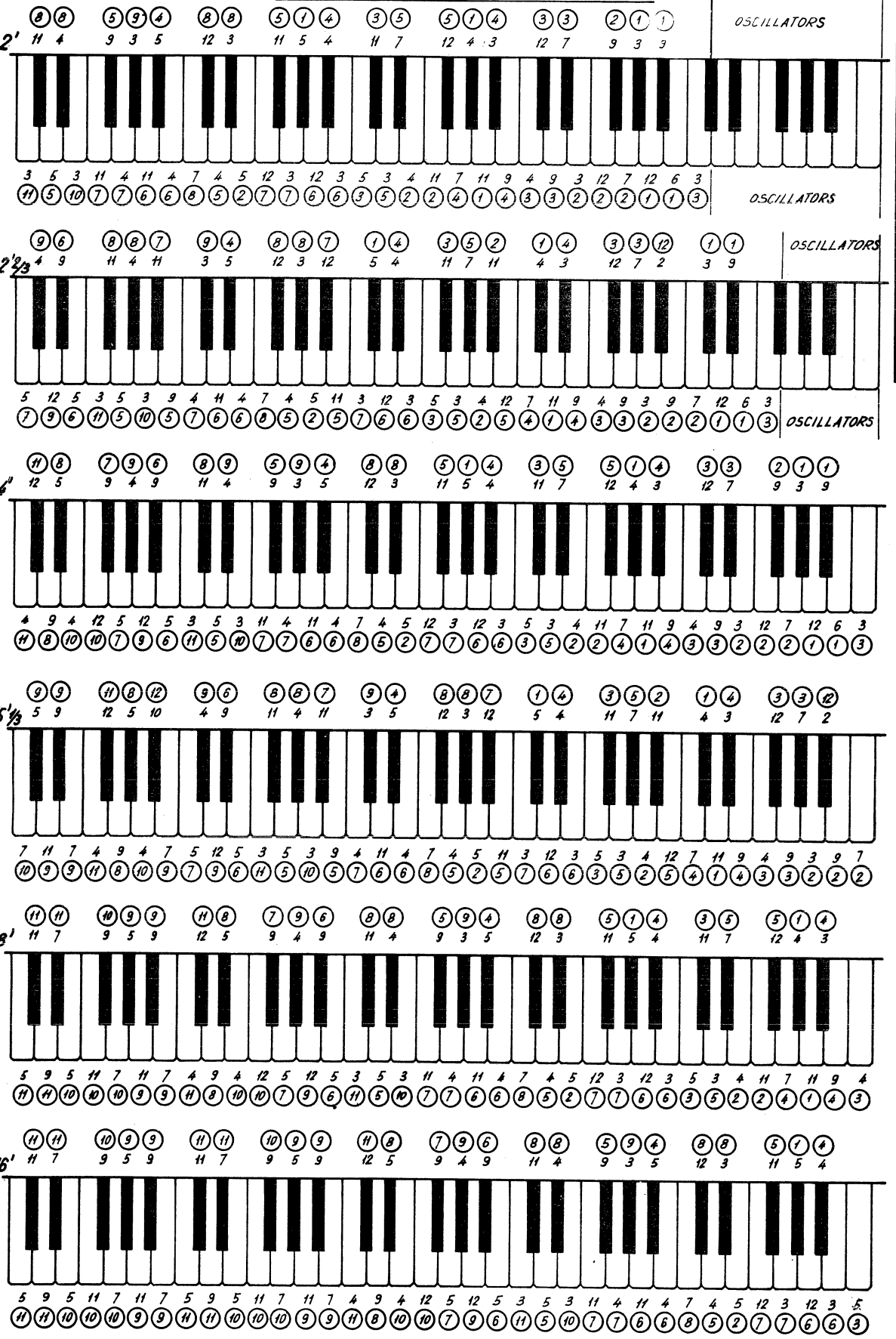


NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

MOD. VIP 345		SERIAL No				
CODE SE-150	DRAWN BY	REVISION				
	CHECKED BY	DATE	15-2-72			

ELAT S.p.A. 1173

REFERENCE TABLE KEY TO GENERATOR BOARD



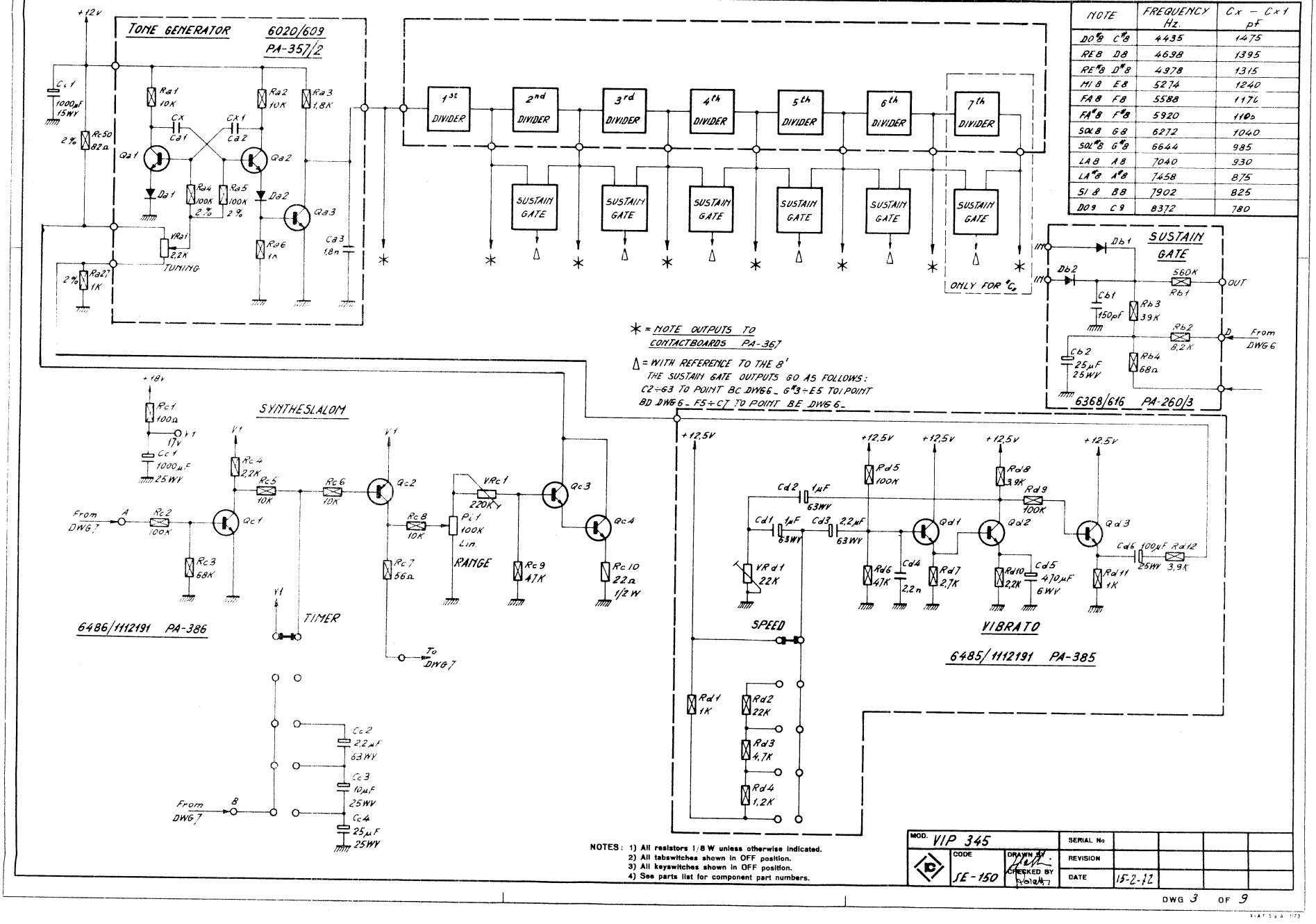
NOTES: 1) All resistors 1/6 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

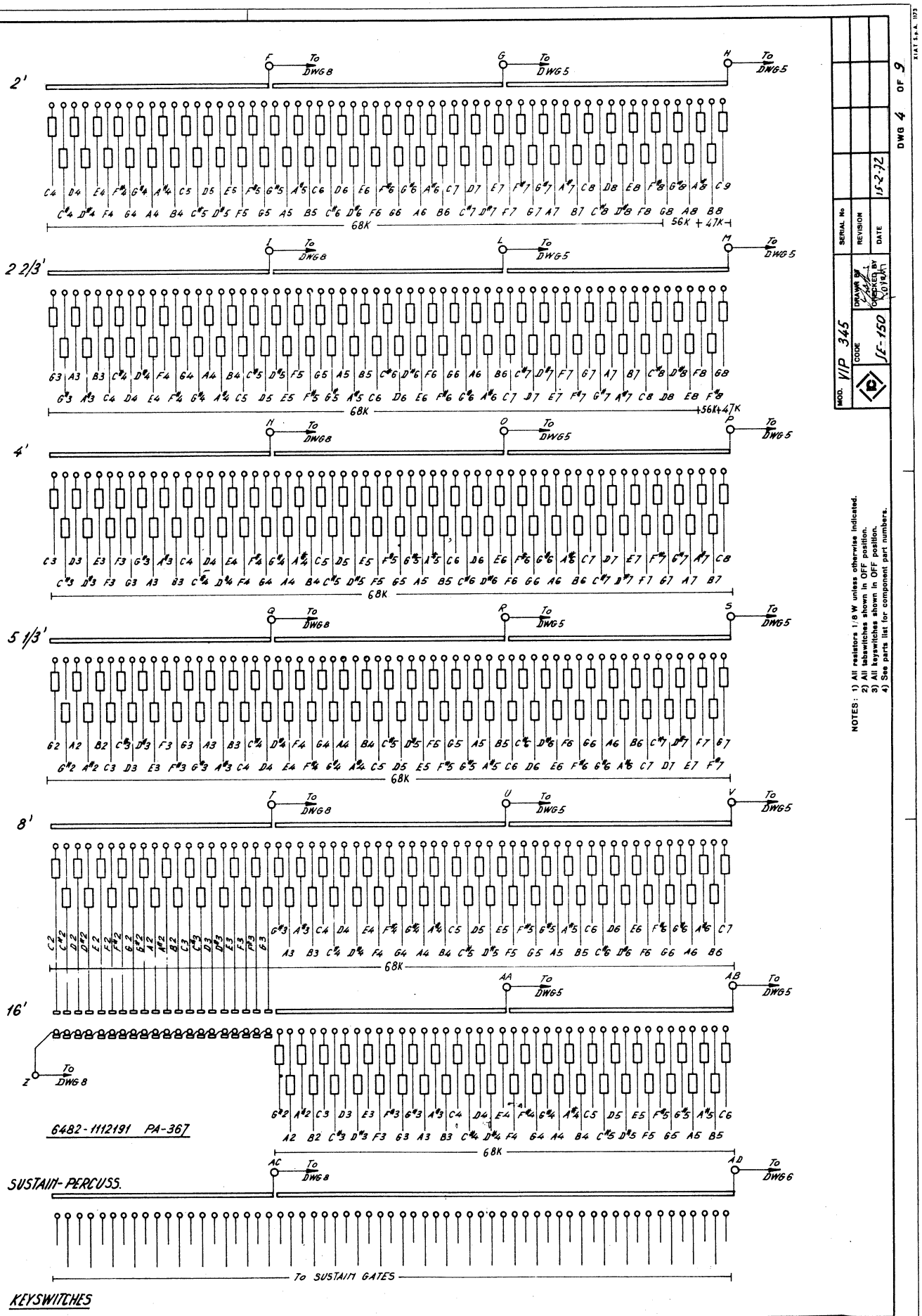
SERIAL No	REVISION	DATE
		15-2-72

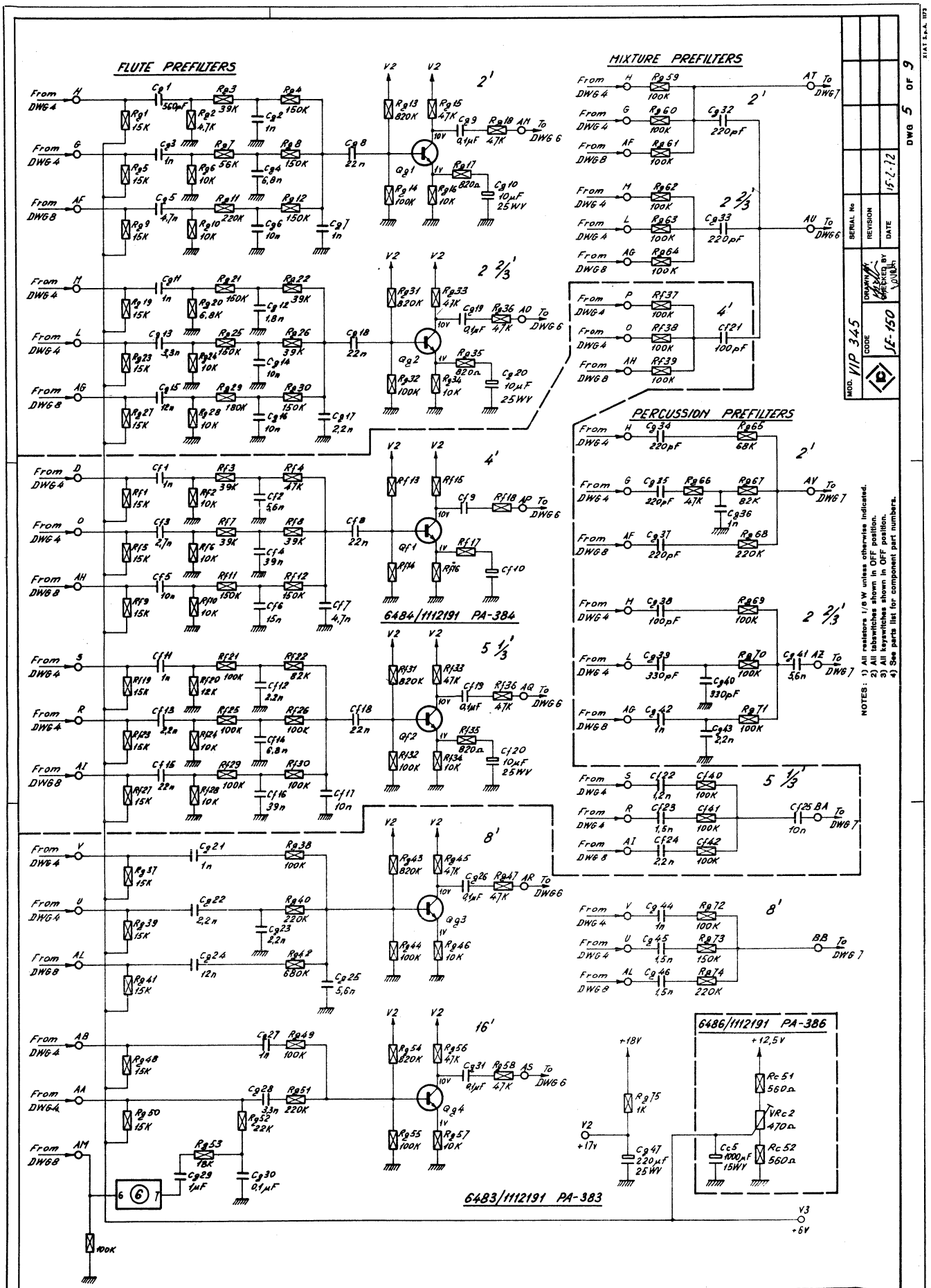
MOD. VIP 345 | CODE SE-150 | DRAWN BY | CHECKED BY

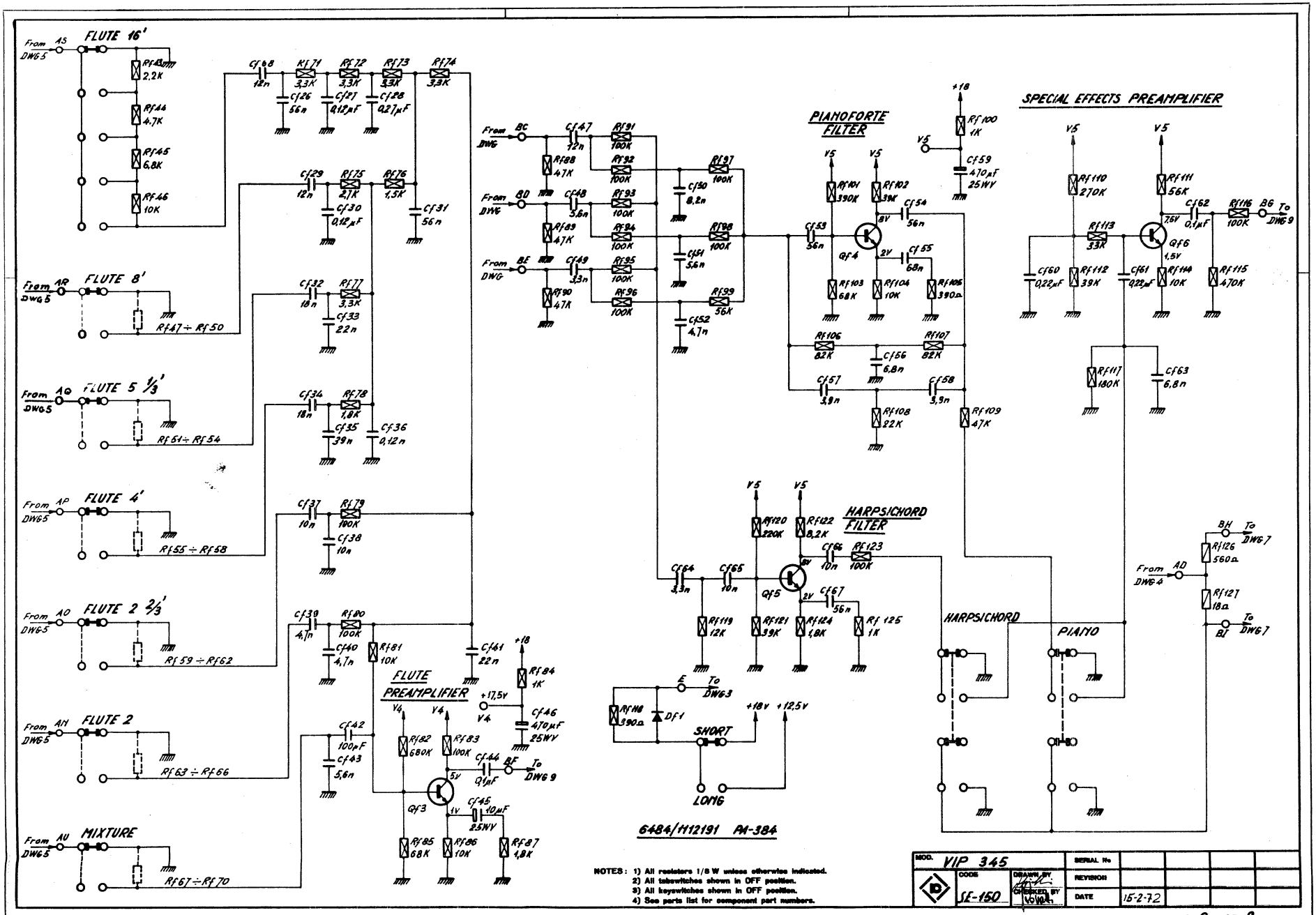
DWG 2 bis OF 9

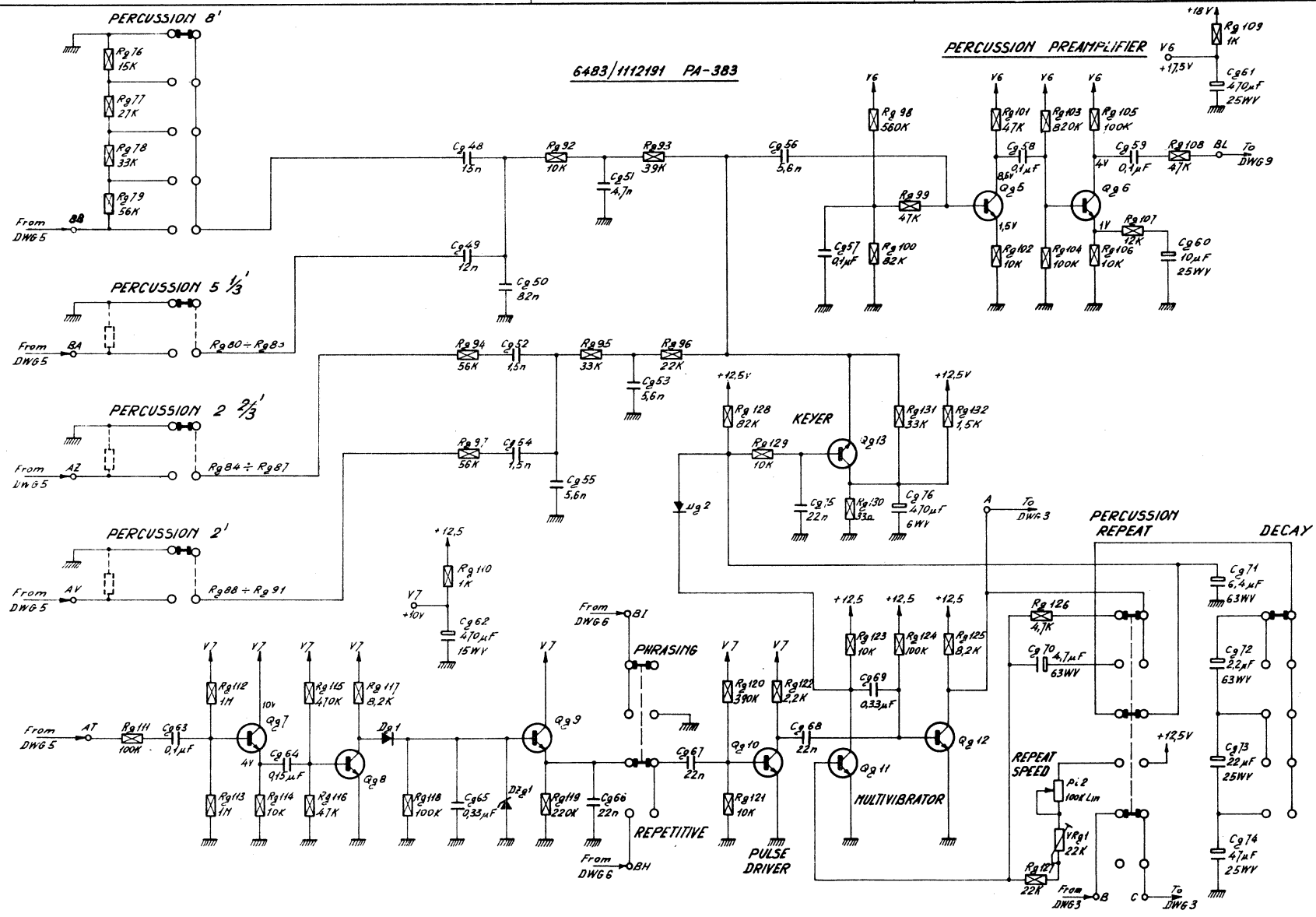
XIAT S.p.A. 1973


TONE GENERATOR 6020/609
PA-357/2
+12V
Ca1
1000µF 15WV
Rc50 82Ω 2%
Ra1 10K
Ra2 10K
Ra3 1,8K
CX Ca1
CX1 Ca2
Qa1
Qa2
Da1
Da2
Ra4 100K 2%
Ra5 100K 2%
Qa3
VRa1 2,2K TUNING
Ra6 1K
Ca3 18n
Ra7 1K 2%
1st DIVIDER
2nd DIVIDER
3rd DIVIDER
4th DIVIDER
5th DIVIDER
6th DIVIDER
7th DIVIDER
SUSTAIN GATE
ONLY FOR °C
* = NOTE OUTPUTS TO CONTACTBOARDS PA-367
Δ = WITH REFERENCE TO THE 8'
THE SUSTAIN GATE OUTPUTS GO AS FOLLOWS:
C2÷G3 TO POINT BC DWG6 - G#3÷F#5 TO POINT BD DWG6 - F5÷C7 TO POINT BE DWG6
NOTE | FREQUENCY Hz. | Cx – Cx1 pF
DO#8 C#8 | 4435 | 1475
RE8 D8 | 4698 | 1395
RE#8 D#8 | 4978 | 1315
MI8 E8 | 5274 | 1240
FA8 F8 | 5588 | 1176
FA#8 F#8 | 5920 | 1105
SOL8 G8 | 6272 | 1040
SOL#8 G#8 | 6644 | 985
LA8 A8 | 7040 | 930
LA#8 A#8 | 7458 | 875
SI 8 B8 | 7902 | 825
DO9 C9 | 8372 | 780
SUSTAIN GATE
Db1
Db2
560K Rb1
OUT
Cb1 150pF
Rb3 39K
Rb2 8,2K
D
From DWG6
Cb2 25µF 25WV
Rb4 68Ω
6368/616 PA-260/3
SYNTHESLALOM
+18V
Rc1 100Ω
V1 17V
Cc1 1000µF 25WV
Rc4 2,2K
Rc5 10K
Rc6 10K
Qc2
Qc1
Qc3
Qc4
VRc1 220K
Pc1 100K Lin. RANGE
Rc8 10K
Rc7 56Ω
Rc9 4,7K
Rc10 22Ω 1/2W
From DWG7
A
Rc2 100K
Rc3 68K
6486/1112191 PA-386
TIMER
To DWG7
Cc2 2,2µF 63WV
Cc3 10µF 25WV
Cc4 25µF 25WV
From DWG7
B
+12,5V
Cd2 1µF 63WV
Cd1 1µF 63WV
Cd3 2,2µF 63WV
VRd1 22K
SPEED
Rd1 1K
Rd2 22K
Rd3 4,7K
Rd4 1,2K
Rd5 100K
Rd6 47K
Cd4 2,2n
Rd7 2,7K
Rd8 3,9K
Rd9 100K
Rd10 2,2K
Cd5 470µF 6WV
Qd1
Qd2
Qd3
Cd6 100µF 25WV
Rd12 3,9K
Rd11 1K
VIBRATO
6485/1112191 PA-385
NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.
MOD. VIP 345
CODE SE-150
DRAWN BY
CHECKED BY
SERIAL No
REVISION
DATE 15-2-72
DWG 3 OF 9


2'
F To DWG8
G To DWG5
H To DWG5
C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6 D6 E6 F#6 G#6 A#6 C7 D7 E7 F#7 G#7 A#7 C8 D8 E8 F#8 G#8 A#8 C9
C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5 C#6 D#6 F6 G6 A6 B6 C#7 D#7 F7 G7 A7 B7 C#8 D#8 F8 G8 A8 B8
68K
56K + 47K
2 2/3'
I To DWG8
L To DWG5
M To DWG5
G3 A3 B3 C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5 C#6 D#6 F6 G6 A6 B6 C#7 D#7 F7 G7 A7 B7 C#8 D#8 F8 G8
G#3 A#3 C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6 D6 E6 F#6 G#6 A#6 C7 D7 E7 F#7 G#7 A#7 C8 D8 E8 F#8
68K
56K+47K
4'
N To DWG8
O To DWG5
P To DWG5
C3 D3 E3 F3 G#3 A#3 C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6 D6 E6 F#6 G#6 A#6 C7 D7 E7 F#7 G#7 A#7 C8
C#3 D#3 F3 G3 A3 B3 C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5 C#6 D#6 F6 G6 A6 B6 C#7 D#7 F7 G7 A7 B7
68K
5 1/3'
Q To DWG8
R To DWG5
S To DWG5
G2 A2 B2 C#3 D#3 F3 G3 A3 B3 C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5 C#6 D#6 F6 G6 A6 B6 C#7 D#7 F7 G7
G#2 A#2 C3 D3 E3 F#3 G#3 A#3 C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6 D6 E6 F#6 G#6 A#6 C7 D7 E7 F#7
68K
8'
T To DWG8
U To DWG5
V To DWG5
C2 C#2 D2 D#2 E2 F2 F#2 G2 G#2 A2 A#2 B2 C3 C#3 D3 D#3 E3 F3 F#3 G3
G#3 A#3 C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6 D6 E6 F#6 G#6 A#6 C7
A3 B3 C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5 C#6 D#6 F6 G6 A6 B6
68K
16'
AA To DWG5
AB To DWG5
Z To DWG8
G#2 A#2 C3 D3 E3 F#3 G#3 A#3 C4 D4 E4 F#4 G#4 A#4 C5 D5 E5 F#5 G#5 A#5 C6
A2 B2 C#3 D#3 F3 G3 A3 B3 C#4 D#4 F4 G4 A4 B4 C#5 D#5 F5 G5 A5 B5
68K
6482-1112191 PA-367
AC To DWG8
AD To DWG6
SUSTAIN-PERCUSS.
To SUSTAIN GATES
KEYSWITCHES
NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.
MOD. V/P 345
CODE JE-150
DRAWN BY
CHECKED BY
SERIAL No
REVISION
DATE 15-2-72
DWG 4 OF 9
EKAT S.p.A. 1123


FLUTE PREFILTERS
MIXTURE PREFILTERS
PERCUSSION PREFILTERS
6484/1112191 PA-384
6483/1112191 PA-383
6486/1112191 PA-386
MOD. VIP 345
CODE JE-150
DRAWN
CHECKED BY
SERIAL No
REVISION
DATE
15-2-72
DWG 5 OF 9
NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.


FLUTE 16'
FLUTE 8'
FLUTE 5 1/3'
FLUTE 4'
FLUTE 2 2/3'
FLUTE 2
MIXTURE
FLUTE PREAMPLIFIER
PIANOFORTE FILTER
HARPSICHORD FILTER
SPECIAL EFFECTS PREAMPLIFIER
HARPSICHORD
PIANO
SHORT
LONG
6484/1112191 AM-384
NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.
MOD. VIP 345
CODE SE-150
SERIAL No
REVISION
DATE 15-2-72
DWG 6 OF 9

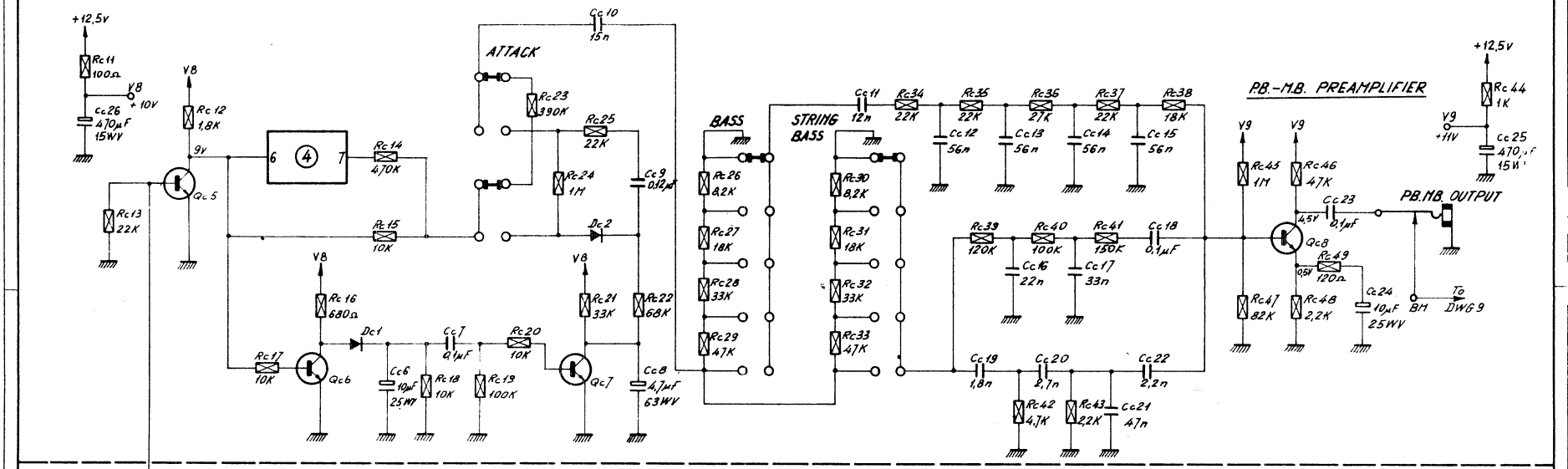


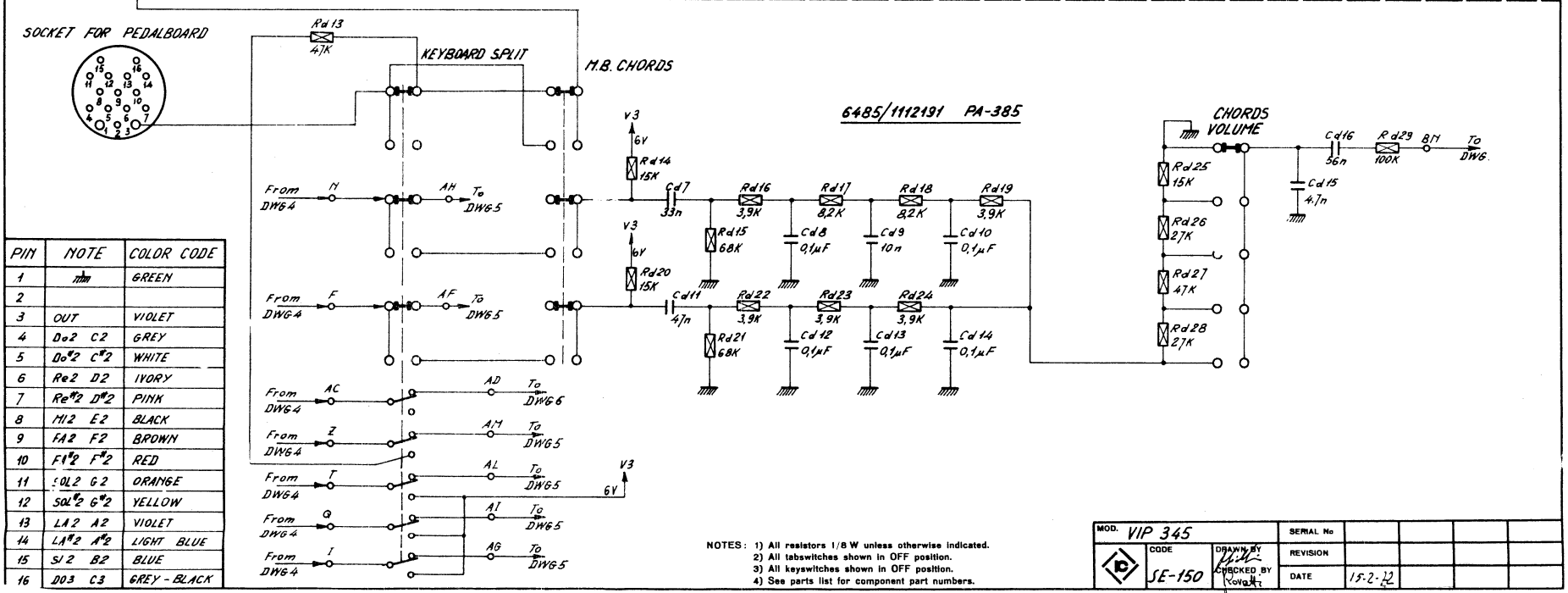
NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

MOD. VIP 345			SERIAL No				
CODE SE-150	DRAWN BY		REVISION				
	CHECKED BY		DATE	16-2-72			

DWG 7 OF 9

XIAT S.p.A. 1173



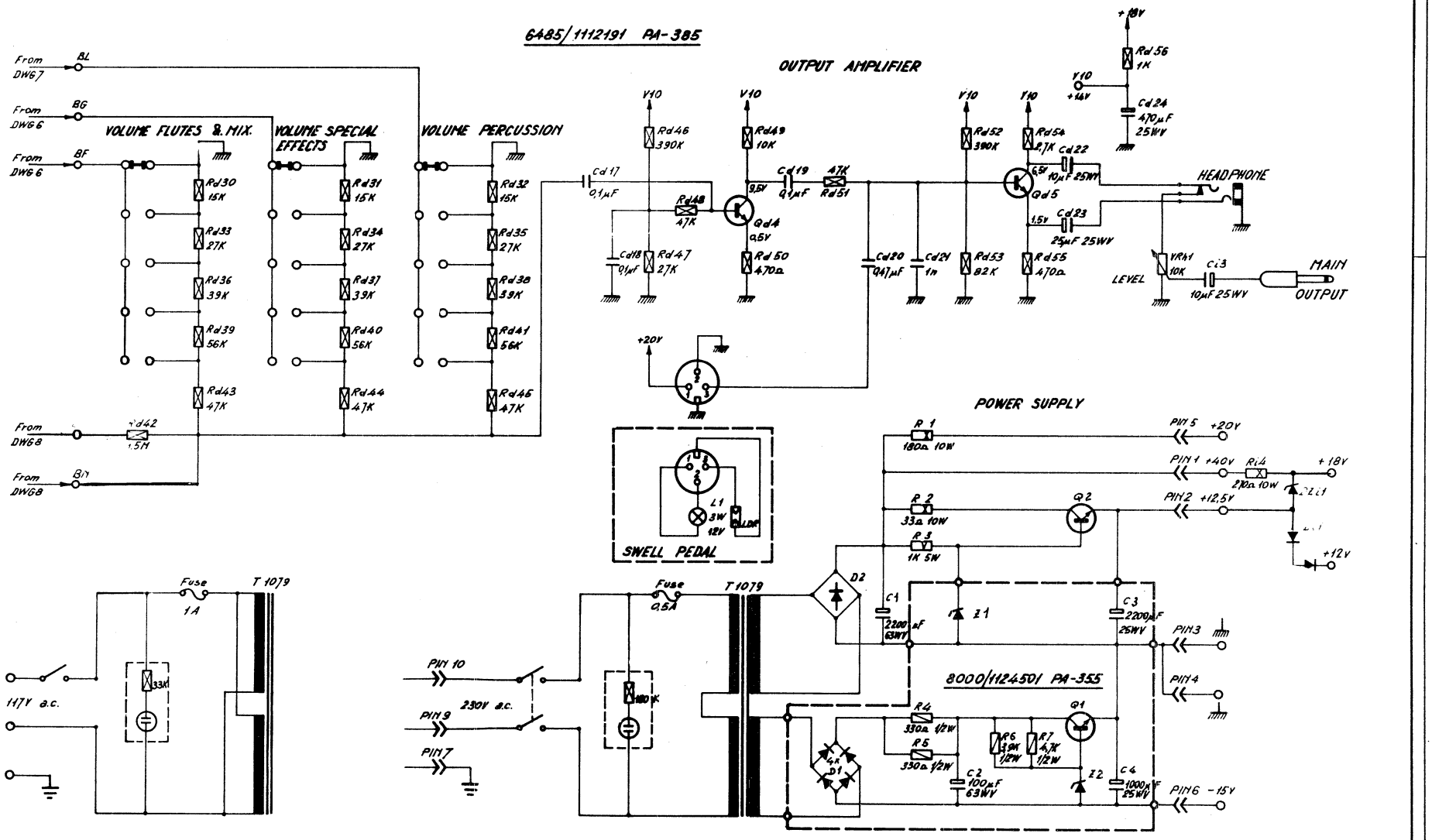


PIN	NOTE	COLOR CODE
1		GREEN
2		
3	OUT	VIOLET
4	Do2 C2	GREY
5	Do#2 C#2	WHITE
6	Re2 D2	IVORY
7	Re#2 D#2	PINK
8	MI2 E2	BLACK
9	FA2 F2	BROWN
10	FA#2 F#2	RED
11	SOL2 G2	ORANGE
12	SOL#2 G#2	YELLOW
13	LA2 A2	VIOLET
14	LA#2 A#2	LIGHT BLUE
15	SI 2 B2	BLUE
16	DO3 C3	GREY - BLACK

NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All tabswitches shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

MOD. VIP 345			SERIAL No		
CODE SE-150	DRAWN BY		REVISION		
	CHECKED BY		DATE	15-2-82	

XIAT S.p.A.



NOTES: 1) All resistors 1/8 W unless otherwise indicated.
2) All interruptions shown in OFF position.
3) All keyswitches shown in OFF position.
4) See parts list for component part numbers.

MOD. VIP 345			SERIAL No				
CODE SE-150	DRAWN BY	CHECKED BY	REVISION				
			DATE	15-2-72			

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VIP 345

COMPONENTS IDENTIFICATION LIST

Part Code	P.C.	Circuit	DWG Ref.	Components
6020/609	PA/257-2	TONE GENERATORS		R a1 ÷ R a7 C a1 ÷ C a3 D a1 ÷ D a3 Q a1 ÷ Q a3 VR a1
6368/646	PA/260-3	SUSTAIN GATE		R b1 ÷ R b4 C b1 ÷ C b2
6486/1112191	PA/386	SYNTHESLALOM MB		R c1 ÷ R c52 C c1 ÷ C c26 D c1 ÷ D c2 Q c1 ÷ Q c8 VR c1 ÷ VR c2
6485/1112191	PA/385	VIBRATO OUTPUT AMPLIFIER		R d1 ÷ R d56 C d1 ÷ C d24 Q d1 ÷ Q d5 VR d1
6482/1112191	PA/367	KEYSWITCH BOARD		R e1 ÷ R e347 C e1 ÷ C e11 I.C. 1÷ I.C. 11
6484/1112191	PA/384	FLUTE FILTER SPECIAL EFFECT FILTER		R f1 ÷ R f127 C f1 ÷ C f68 Q f1 ÷ Q f6 D f1
6483/1112191	PA/383	PERCUSSION FILTER REPEAT		R g1 ÷ R g132 C g1 ÷ C g76 D g1 ÷ D g2 Q g1 ÷ Q g13 DZ g1 VR g1
8000/1124501 6449/1124501	CHASSIS PA/355	POWER SUPPLY and VOLTAGE REGULATOR BOARD		R 1 ÷ R 7 C 1 ÷ C 4 D 1 ÷ D 2 Z 1 – Z 2 Q 1 – Q 2
INSIDE the INSTRUMENT				R i4 – VR i1 C i1 – C i3 P i1 – P i2 D i1 – DZ i1

VIP 345

TRANSISTORS (Q) & DIODES (D) LIST

Schem. Ref.	Circuit	Type	Part Code
PA/357-2	**TONE GENERATOR (DWG 3/ SE 150)**		
Q a1	Master oscillator	BC 207 B or C	W/108 - W/109
Q a2	Master oscillator	G.E. 2N 5172	W/126
		BC 109 B or C	W/98 - W/101
Q a3	Buffer Amplifier	BC 209 B or C	W/110 - W/111
D a1 - D a2	Base Breakdown Protection	SGS IX 9809	B/34
		TEXAS D 525 A or B	B/110 - B/111
		IRCI 10D1-10D2	B/50 - B/92
D a3	THRESHOLD	IRCI 10D4- 5D1	B/51 - B/91
		PAE R/6	B/18
PA/260-3	**SUSTAIN MODULE (DWG 3/ SE 150)**		
D b1	Sustain gate	SGS IX 9809	B/34
D b2	Sustain gate	TEXAS D 525 A or B	B/110 - B/111
PA/386	**SYNTHESLALOM M.B**		
Q c1	Buffer		
Q c5	Buffer	G.E. 2N 5172	W/126
Q c6	Attack control		
Q c7	Attack control		
Q c2	Control	SGS IW 9640	W/89
Q c3	Driver	BC 109 B - BC 209 B	W/101 - W/110
Q c8	M.B Preamplifier		
Q c4	Driver	BC 286	W/64
D c1	Diode	TEXAS D 525 A or B	B/110 - B/111
D c2	Gate		
PA/385	**CHORDS-VIBRATO-OUTPUT AMPLIFIER (DWG 3-8-9 / SE 150)**		
Q d1	Vibrato oscillator	G.E. 2N 5172	W/126
Q d2			
Q d3	Vibrato Driver	BC 109 B - BC 209 B	W/101 - W/110
Q d5	Amplifier		
Q d4	Amplifier	BC 109 B, red dot	W/143
		BC 209 B, red dot	W/145

Schem. Ref.	Circuit	Type	Part Code
PA/384	FLUTE FILTERS & SPECIAL EFFECTS FILTERS (DWG 5-6/ SE 150)		
Q f1	Preamplifier	BC/109-B	W/101
Q f2	Preamplifier	BC/209-B	W/110
Q f4	Pianoforte Filter		
Q f5	Harpsichord Filter		
Q f3	Flute Preamplifier	BC/109-B, red dot	W/143
Q f6	Special Effects Preamplifier ...	BC/209-B, red dot	W/145
D f1	Diode	TEXAS D 525 A or B	B/110 - B/111
		SGS IX 9808	B/34
PA/383	PERCUSSION FILTERS & REPEAT (DWG 5-7/ SE 150)		
Q g1	Preamplifier		
Q g2	Preamplifier	BC/109-B	W/101
Q g8	Amplifier	BC/209-B	W/110
Q g13	Keyer		
Q g5	Percussion Preamplifier	BC/109-B, red dot	W/143
Q g6	Percussion Preamplifier	BC/209-B, red dot	W/145
Q g7	Buffer		
Q g9	Phrasing Driver		
Q g10	Pulse Driver	G.E. 2N 5172	W/126
Q g11	Percussion Multivibrator		
Q g12	Percussion Multivibrator		
Q g5	Percussion Preamplifier	BC/109-B, red dot	W/143
Q g6	Percussion Preamplifier	BC/209-B, red dot	W/145
D g1	Diode	SGS IX 9809	B/34
		TEXAS D 525 A or B	B/110-B/111
D g2	Diode	IRCI 10D1 - 10D4	B/50 - B/51
		IRCI 10D2	B/92
DZ g1	ZENER	IRCI IN 708	B/68
		IRCI IN 752 A	
		ITT ZF 5,6	B/69
		MULLARD BZY 88 C 5V6 ...	

Schem. Ref.	Circuit	Type	Part Code
CHASSIS	POWER SUPPLY CHASSIS (DWG 9/ SE 150)		
Q 2	Series Stabilizer	WESTINGHOUSE 156-043 ...	W/114
		SOLITRON H 9340	W/164
D 2	Rectifier Bridge	ITT STANDARD B 40-C 2200	Y/14 - Y/15
		SIEMENS B 40-C 2200	Y/14 - Y/15
		AEG B 40-C 2200	Y/14 - Y/15
PA/355	VOLTAGE REGULATOR BOARD (DWG 9/ SE 150)		
Q 1	Series Stabilizer	SGS BC 286 (ex BC 142)..	W/64
D 1	Rectifier Diode (Bridge)	MISTRAL SFD 182	B/77
		TEXAS 1N 914	B/108
Z 1	Voltage Reference-Diode Zener .. (13V-1W)	IRCI 1 Z 13	B/105
		MOTOROLA 1N 4743	B/105
Z 2	Voltage Reference-Diode Zener .. (15V-400mW)	ITT STANDARD ZF 15	B/106
		MOTOROLA 1N 5245-B	B/106
TERMINAL STRIP (inside device) - (DWG 9/ SE 150)			
D i1	THRESHOLD	IRCI 10D1-10D2	B/50 - B/92
		IRCI 10D4- 5D1	B/51 - B/91
		PAE R-6	B/18
DZ i1	ZENER Diode + 12V DROP ..... (6,2V-1W)	MOTOROLA 1N 4335 A	B/109
		IRCI 1Z 6,2	
		ITT STANDARD ZD 6,2	
		MULLARD BZY 96 C 6V2 ...	
PA/367	KEYSWITCH BOARD (DWG 4/ SE 150)		
I.C. 1 + 11	Integrated Frequency Divider ...	.....	W/1100-1101